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PENSOFT

Mantidflies (Neuroptera, Mantispidae) from Tocantins state (Brazil): distribution and identification key

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Abstract
This study focused on Mantispidae species (Neuroptera) from Tocantins state in Brazil. Herein we provide nine new records to this state, increasing the total number of mantidflies from Tocantins to 12. New records are as following: *Anchieta fumosella* (Westwood, 1867); *Dicromantispa moulti* (Navás, 1909); *Entanoneura batesella* (Westwood, 1867); *Haematomantispa* sp.; *Leptomantispa chaos* Hoffman, 2002*; Plega hagenella* (Westwood, 1867); *Trichoscelia varia* (Walker, 1853); *Zeugomantispa compellens* (Walker, 1860); *Z. virescens* (Rambur, 1842). We also provide the first list of Mantispidae species from Tocantins, including general notes for each one, and identification key for these species.

Key words
Symphrasinae, Mantispinae, Brazilian Savannah, inventory, new records.

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Introduction

The order Neuroptera is classified within Holometabola, and together with Megaloptera (its sister group) and Raphidioptera make up the superorder Neuropterida (Winterton et al. 2018). Distributed worldwide, the Neuroptera contains approximately 6000 extant species, which are divided into 16 families (Engel et al. 2018, Machado et al. 2018). Only 9 of these families (Berothidae, Chrysopidae, Coniopterygidae, Dilaridae, Hemerobiidae, Mantispidae, Myrmeleontidae, Osmylidae, Sisyridae), with a total of 425 species, are known from Brazil (Machado 2018).

The subcosmopolitan family Mantispidae occurrs on all continents except Antarctica (Oswald and Machado 2018). The traditional classification divides the family into 4 subfamilies (Symphrasinae, Drepanicinae, Calomantispinae, Mantispinae) with approximately 395 species in 44 genera (Oswald and Machado 2018). However, a recent phylogenomic study found that the Mantispidae is paraphyletic within the superfamily Mantispoidea (Winterton et al. 2018). The superfamily was divided by 2 clades, 1 composed of Berothidae + ((Drepanicinae + Calomantispinae) + Mantispinae)), and another composed of Symphrasinae and Rhachiberothidae (a group previously classified within Mantispidae) (Winterton et al. 2018). According to the traditional classification, in Brazil there are records for 3 subfamilies (Symphrasinae, Drepanicinae, Mantispinae), 13 genera and 52 species (14 endemic) (Machado and Martins 2018).

Inventories of mantispids are scarce in Brazil and typically are based on old collections in museums. These materials were mostly obtained from field collections

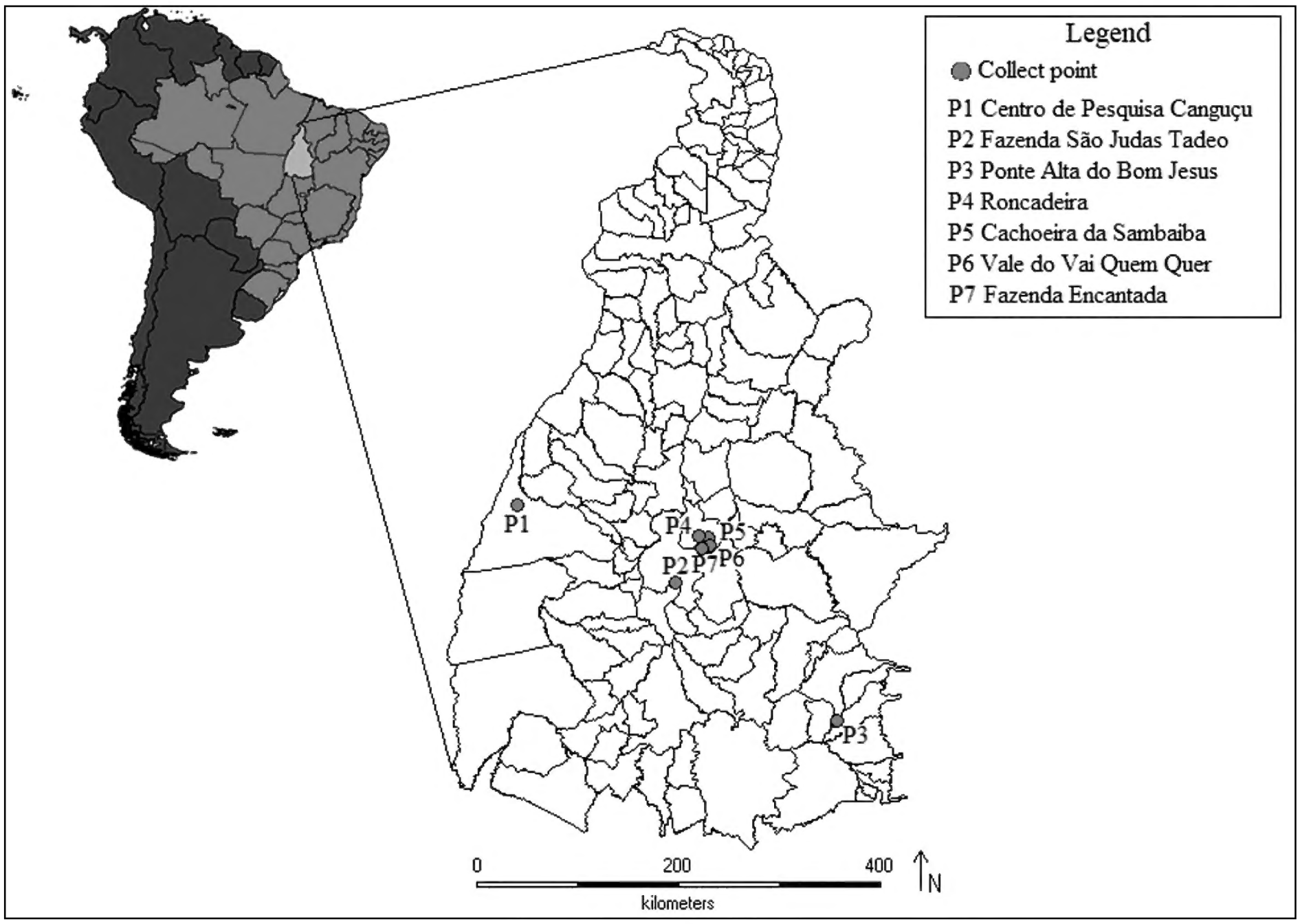


Figure 1. South America map highlighting Tocantins state (Brazil) and 4 municipalities where specimens of Mantispidae were sampled: Pium (P1), Porto Nacional (P2), Ponte Alta do Bom Jesus (P3) and Palmas/Taquaruçu (P4, P5, P6, and P7).

not particularly focused on the family. Major inventories of Brazilian Mantispidae are Penny (1982), Penny and Costa (1983), and Machado and Rafael (2010), with Penny (1982) focusing on the Amazon region while the other publications covered the whole country. Thus far, no inventory focusing on the Mantispidae of Tocantins has been published, and only 3 species were previously recorded from the state: *Dicromantispa gracilis* (Erichson, 1839), *D. hyalina* Machado & Rafael 2010, and *Leptomantispa axillaris* (Navás, 1908). While *D. gracilis* and *L. axillaris* present a wide distribution throughout the Brazilian territory, *D. hyalina* is known only from its type locality in Tocantins.

Tocantins is located within 2 of the major Brazilian biomes, the Cerrado (Brazilian Savannah) and the Amazon forest (tropical rainforest), in which 33 species of mantispids have been previously recorded. In this sense, the low number of mantispid species known from Tocantins indicates that the currently diversity of mantidflies is underestimated in the state, justifying the study presented here.

Methods

Examined materials were partially composed of specimens from various places in Tocantins, Brazil, that were deposited at the Coleção de Entomologia da Universidade Federal do Tocantins (CEUFT). The remaining materials were collected in 2 separate areas: Centro de Pesquisa Canguçu (CPC, = Canguçu Research Center) and Taquaruçu municipality (Fig. 1). Specimens were collected with Malaise traps (Townes 1972), Pennsylvania light traps, and light sheets with white and black lights.

Specimens were identified using taxonomic keys, diagnosis, original descriptions, redescriptions, and illustrations from Penny (1982), Penny and Costa (1983), and Machado and Rafael (2010). A stereomicroscope (MOTIC SMZ-168) was used to identifty the species. Images were taken by a camera (Nikon Digital Sight DS-Ri1) attached to a stereomicroscope (Nikon SMZ-1500) or, when necessary, a separated photographic camera (Nikon d7100, Sigma Macro lens). Species with high resolution images available in recent literature were not included here, avoiding redundancy in this way (Machado and Rafael 2010). The identification key proposed in this study is modified from Penny (1982) and Machado and Rafael (2010).

For some species, the study of the genitalia was needed to confirm their identification. The genitalia were extracted and macerated in lactic acid 85% (Cumming 1992) and then transferred to glycerin and studied under the magnification. After examination the genitalia were stored in microvial filled with glycerin, and pinned under the respective specimen.

Table 1. Species of mantidflies (Mantispidae) sampled from Tocantins, Brazil. All specimens are deposited at CEUFT.

Subfamily	Species	♀	♂	Total
Symphrasinae	*Anchieta fumosella* (Westwood, 1867)	2	5	7
	Plega hagenella (Westwood, 1867)	2	0	2
	Trichoscelia varia (Walker, 1853)	6	10	16
Mantispinae	*Dicromantispa moulti* (Navás, 1909)	4	3	7
	Entanoneura batesella (Westwood, 1867)	1	4	5
	Haematomantispa sp.	1	0	1
	Leptomantispa chaos Hoffman, 2002	7	15	22
	Zeugomantispa compellens (Walker, 1860)	8	10	18
	Zeugomantispa virescens (Rambur, 1842)	19	23	42
		50	70	120

Results

In our study, 120 specimens (Table 1) were obtained. These included representatives of 2 subfamilies: Symphrasinae, with 3 species belonging to 3 genera and Mantispinae, with six species in 5 genera. Three species previously reported from Tocantins (*D. gracilis* (Erichson, 1839), *D. hyalina* Machado & Rafael, 2010 and *L. axillaris* (Navás, 1908)) were not collected by us or found in the CEUFT collection.

Identification Key to the species of Mantispidae from Tocantins (modified from Penny 1982; Machado and Rafael 2010)

1 Pronotum wider than long; foreleg with 2 pretarsal claws 2

1′ Pronotum longer than wide; foreleg with 1 pretarsal claw 4

2 Forefemur with a subbasal spine..... 3

2′ Forefemur without a subbasal spine .... *Trichoscelia varia*

3 Body yellow with black spots; forewing with a large amber spot in subcostal and radial cells; second radial cell straight with 5 veins originating from it ..... *Anchieta fumosella*

3′ Body dark brown with yellow spots; forewing hyaline; second radial cell slightly curved at distal area, with 2 veins originating from it ..... *Plega hagenella*

4 Pronotum completely covered by setae 5

4′ Pronotum with setae only on the anterior and posterior ends 9

5 Body predominantly dark-red *Haematomantispa* sp.

5′ Body with a different color pattern 6

6 Body mostly green, pronotal setae arising from distinct bumps..... 7

6′ Body with a different color pattern, pronotal setae arising flush with pronotal surface..... 8

7 Pterostigma and parts of pronotum light-red ....*Zeugomantispa compellens*

7′ Pterostigma and pronotum green ....*Zeugomantispa virescens*

8 Forewing pterostigma red, space between subcostal and radial veins hyaline, forefemur entirely dark-brown ventrally ..... *Leptomantispa axillaris*

8′ Forewing pterostigma dark-brown, space between subcostal and radial veins light-brown, forefemur with a ventral dark brown spot .... *Leptomantispa chaos*

9 Body dark-yellow with brown marks; pterostigma elongated, forewing with a large amber spot, foreleg midtarsomere equal or longer than other tarsomeres combined..... *Entanoneura batesella*

9′ Body brown to light-brown, pterostigma not elongated, forewing hyaline with small dark spots at base, foreleg midtarsomere shorter than other tarsomeres combined 10

10 Forewing membrane with brown marks at base .... *Dicromantispa moulti*

10′ Forewing membrane hyaline at base..... 11

11 Pterostigma reddish, male ventromedial lobe straight ..... *Dicromantispa gracilis*

11′ Pterostigma yellowish with tip brown, male ventromedial lobe curved..... *Dicromantispa hyalina*

List of Mantispidae from Tocantins, Brazil

Symphrasinae Navás, 1909

***Anchieta fumosella* (Westwood, 1867)**
Figure 2A–H

Diagnosis. This species has the body mostly yellow with black marks, pronotum broader than long, foreleg with 1 pretarsal claw, forewing with a large amber spot on the subcostal and radial cells, second radial cell straight with 5 veins originating from it, and the forefemur with subbasal spine. Females with a long ovipositor.

Examined material. Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 28–29.viii.2017, Krolow, T.K. & Equipe leg. (2♂, 1♀ CEUFT); Brazil, Tocantins, Palmas, Cachoeira Sambaíba, 10°22′30.0″ S, 048°07′33.0″ W, 15–16.xi.2017, Krolow, T.K. & Equipe leg. (1♂, 1♀ CEUFT); Brazil, Tocantins, Palmas, Vale do vai quem quer, 10°23′40.1″ S. 048°07′55.8″ W, 13–14.xi.2017, Krolow, T.K. & Equipe leg. (2♂ CEUFT).

Distribution. Brazil: Bahia, Goiás, Distrito Federal,

Minas Gerais, São Paulo, Rio de Janeiro, Paraná, and Santa Catarina (Machado and Martins 2018).

New records. Tocantins: Palmas municipality.

Comments. In the same samples that specimens of *A. fumosella* were collected, some parasitoid wasps (Hymenoptera, Ichneumonidae) with very similar (mimetic) body color pattern were always present. This possibly indicates an ecological interaction between these species, and therefore, reinforces the well-known relationship

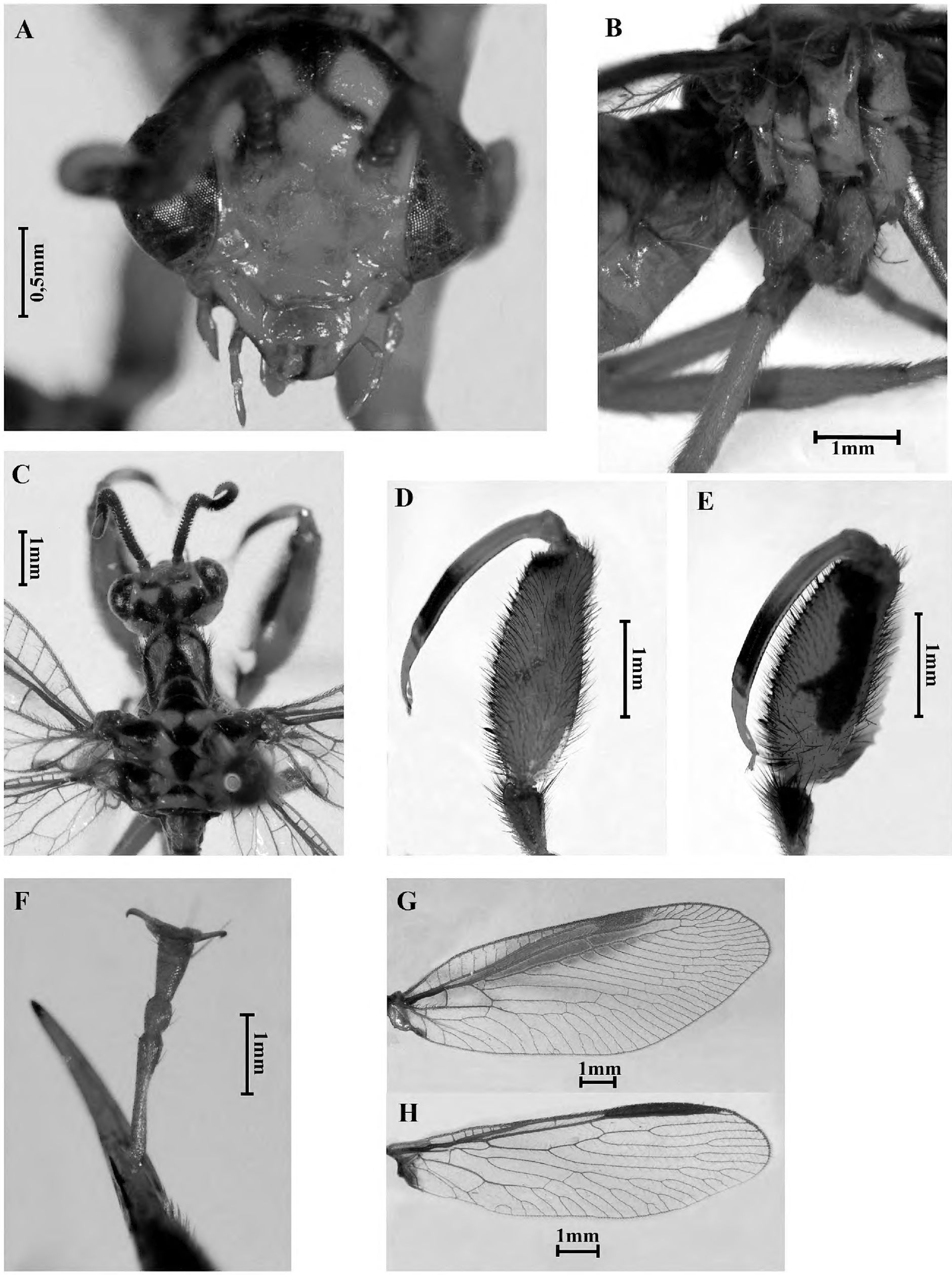


Figure 2. *Anchieta fumosella* (Westwood, 1867). **A.** Head, anterior view. **B.** Mesonotum, lateral view. **C.** Head and thorax, dorsal view **D.** Foreleg, external view. **E.** Foreleg, interior view. **F.** Pretarsal claw. **G.** Forewing. **H.** Hind wing.

between Symphrasinae and Hymenoptera (Redborg 1998, Tauber et al. 2009, Maia-Silva et al. 2013, Tauber et al. 2017).

***Plega hagenella* (Westwood, 1867)**
Figure 3A–G

Diagnosis. This species has the body mostly yellow with dark-brown marks, pronotum broader than long, subapical flagellomeres white, foreleg with 1 pretarsal claw and forefemur with subbasal spine. Females with a long ovipositor.

Examined material. Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 09–10.xi.2012, Krolow, T.K. & Lima, H.I.L. leg. (1♀ CEUFT); Brazil, Tocantins, Ponte Alta do Bom Jesus, 12°05′46.6″ S, 046°29′06.6″ W, 30.x.2016, Santos, M.A. leg. (1♀ CEUFT)

Distribution. Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, Bolivia and Brazil: Roraima, Amazonas, Pará, Maranhão, Rio Grande do Norte, Acre, Rondônia, Mato Grosso, and Minas Gerais (Machado and Martins 2018, Ardila-Camacho et al. 2018).

New records. Tocantins: Palmas and Ponte Alta do Bom Jesus municipalities.

Comments. *Plega hagenella* is somewhat similar to *T. varia*, especially in the body color pattern, but these species can be easily distinguished based on the presence of the subbasal spine in *Plega*.

***Trichoscelia varia* (Walker, 1853)**
Figure 4A–G

Diagnosis. This species has the body mostly dark-brown with yellow marks, pronotum broader than long, forewing hyaline, second radial cell slightly curved at the distal area with 2 veins originating from it, foreleg with 1 pretarsal claw and forefemur without subbasal spine. Females with a long ovipositor.

Examined material. Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 9–10.xi.2012, Krolow, T.K. & Lima, H.I.L. leg. (5♂, 10♀ CEUFT); Brazil, Tocantins, Palmas, Vale do vai quem quer, 10°23′40.1″ S, 048°07′55.8″ W, 13–14.xi.2017, Krolow, T.K. & Equipe leg. (1♂ CEUFT).

Distribution. Venezuela, Suriname, Argentina, Uruguay, and Brazil: Amazonas, Pará, Maranhão, Ceará, Rio Grande do Norte, Acre, Rondônia, Mato Grosso, Rio de Janeiro, São Paulo, Santa Catarina, and Rio Grande do Sul (Machado and Martins 2018).

New records. Tocantins: Palmas municipality.

Comments. Only 2 females of *T. varia* were present in the CEUFT collection, which made it impossible to do a morphological comparison between both sexes. Collected specimens were pinned, but during the drying process the specimens became twisted, which reduced the quality of some photographs.

Mantispinae Leach, 1815

***Dicromantispa gracilis* (Erichson, 1839)**

Examined material. None.

Distribution. Costa Rica, Ecuador, Guyana, Panama, Uruguay, Venezuela. Argentina, Bolivia, Colombia, and Brazil: Roraima, Amazonas, Tocantins, Mato Grosso, Bahia, Distrito Federal, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul (Machado and Rafael 2010, Ardila-Camacho et al. 2018).

Comments. Specimens were not collected during this study, and the only known records for the state are 2 males from Parque Estadual do Jalapão, located at the eastern part of Tocantins (Machado and Rafael 2010).

***Dicromantispa hyalina* Machado & Rafael, 2010**

Examined material. None.

Distribution. Tocantins: Pindorama and Rio Balsas municipalities (Machado and Rafael 2010).

Comments. Specimens of this species were not collected during this study, and the type locality (Pindorama), which is characterized by Cerrado, remains the only known area for this species' occurrence.

***Dicromantispa moulti* (Navás, 1909)**

Diagnosis. This species has the body mostly light-brown, pronotum longer than broad with setae present only on the anterior and posterior ends, wings mostly hyaline with small brown marks at the basal region, foreleg with 2 pretarsal claws and foreleg midtarsomere shorter than the other tarsomeres combined.

Examined material. Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 13–18.v.2016, Krolow, T.K. & Equipe leg. (1♂ CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 7–10.iii.2016, Krolow, T.K. & Equipe leg. (2♂ 3♀CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050° 02′13.1″ W, 30.iii.2017, Alvim, B.C.G. leg. (1♀ CEUFT).

Distribution. Colombia, French Guiana and Brazil: Amazonas, Espírito Santo, and São Paulo (Machado and Martins 2018).

New records. Tocantins: Pium municipality.

Comments. Some specimens collected here (12–15 mm) are smaller than the average size (14–19 mm) of this species as presented in the literature (Penny 1982, Penny and Costa 1983). It might be related to a possible regional variation or food availability during larval stage (Redborg 1998).

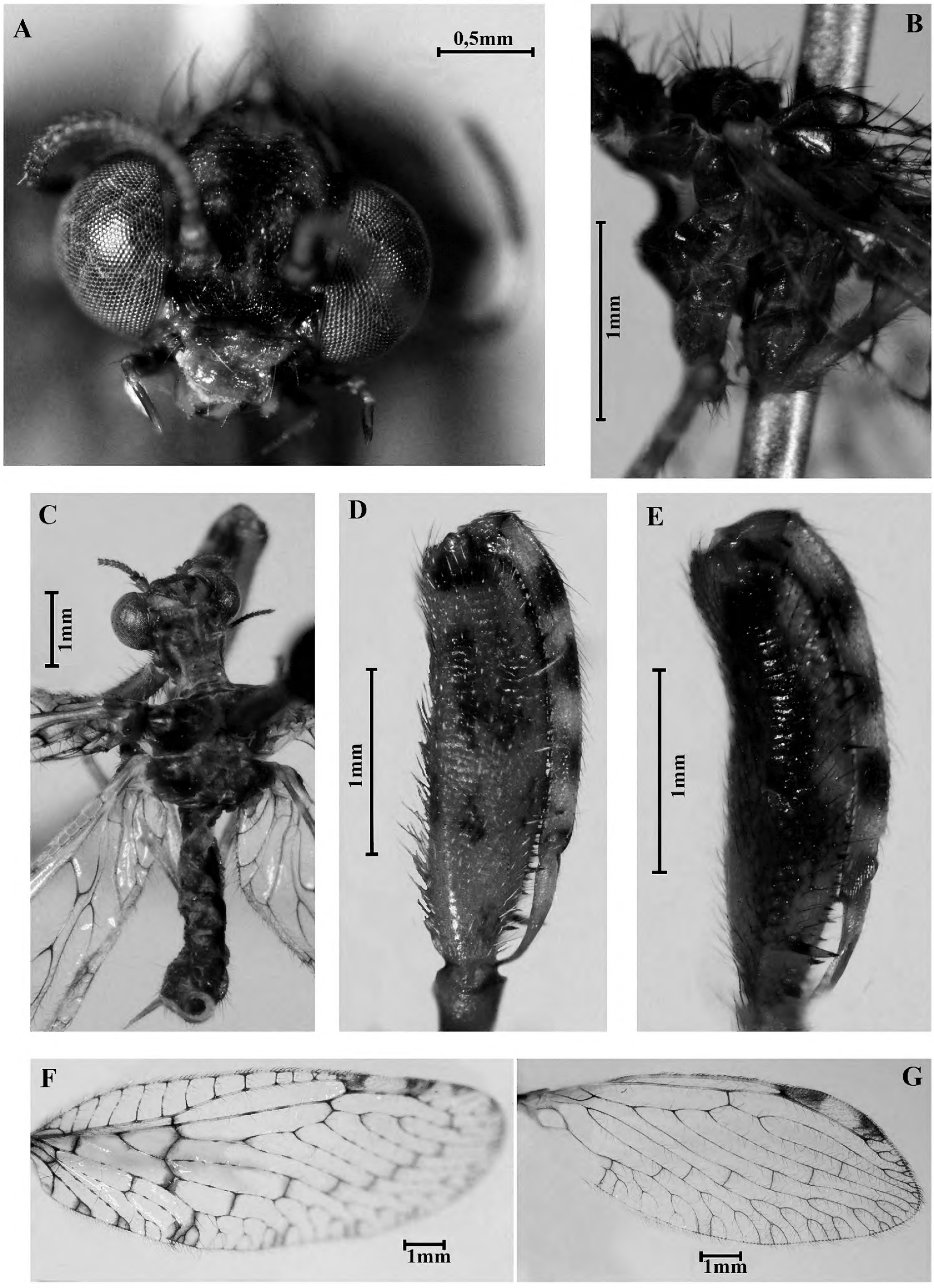
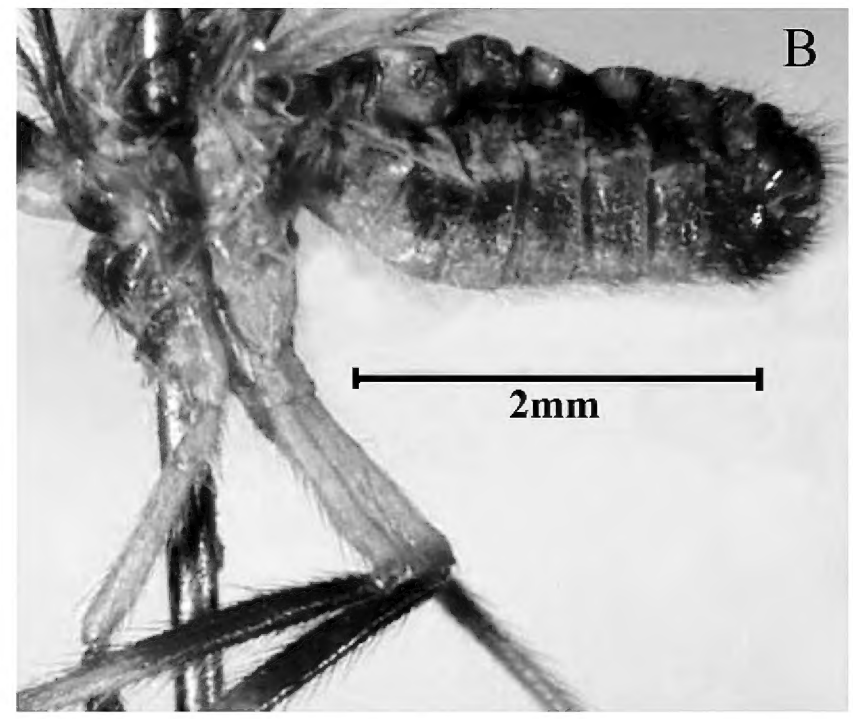
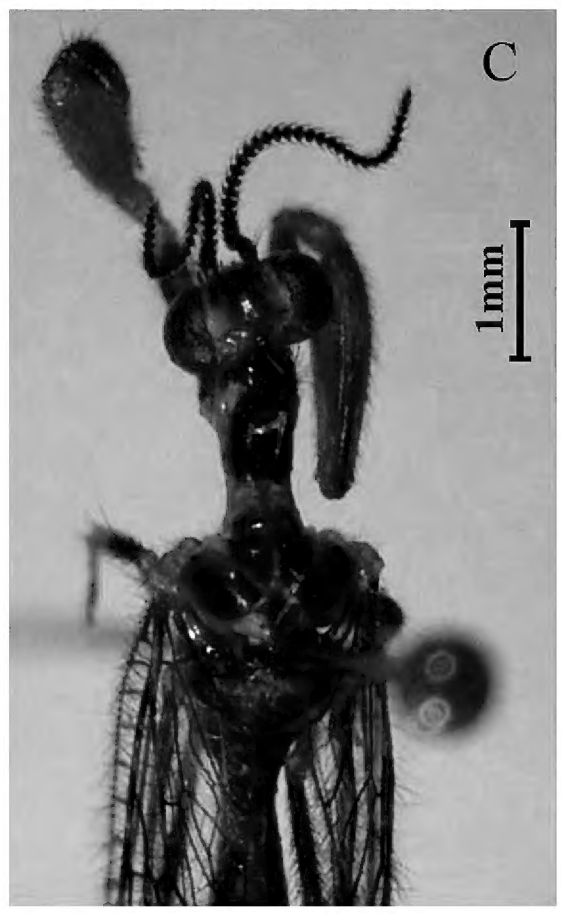
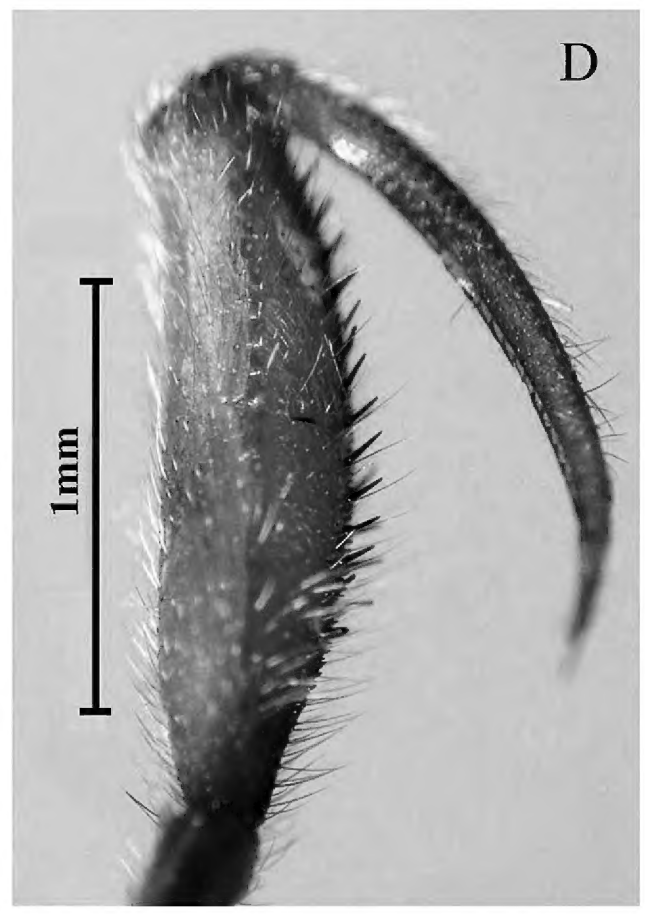
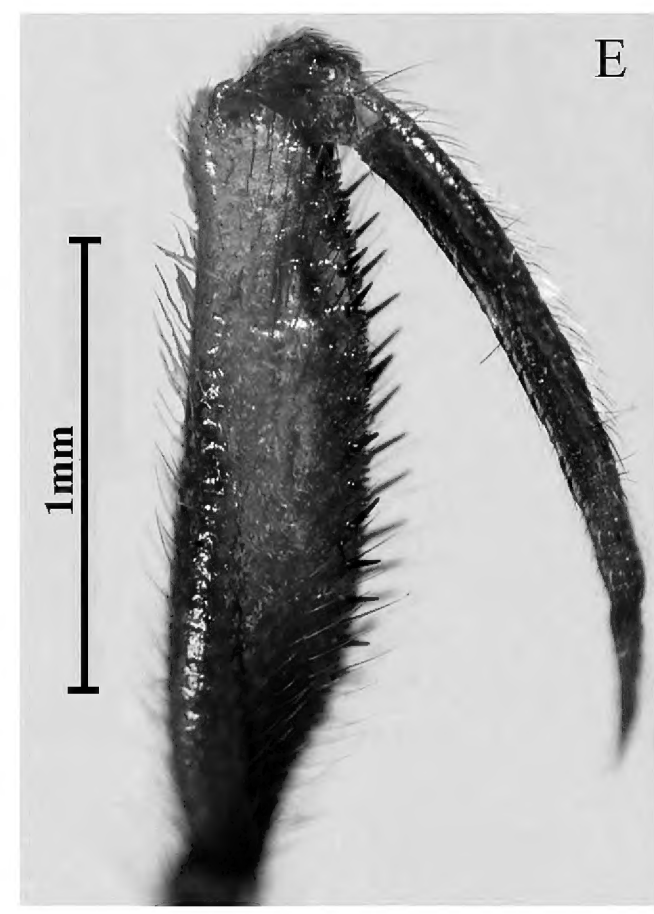


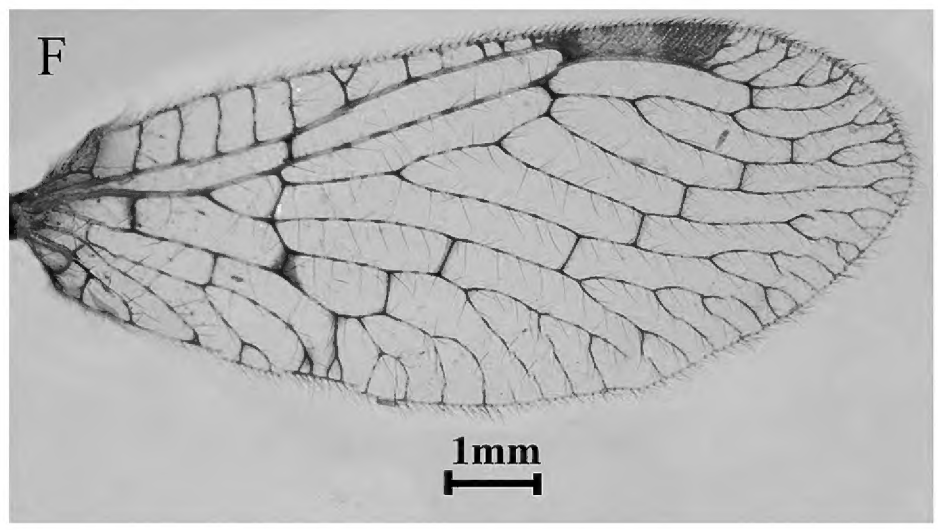
Figure 3. *Plega hagenella* (Westwood, 1867). **A.** Head, anterior view. **B.** Mesonotum, lateral view. **C.** Head and thorax, dorsal view. **D.** Foreleg, external view. **E.** Foreleg, interior view. **F.** Forewing. **G.** Hind win.











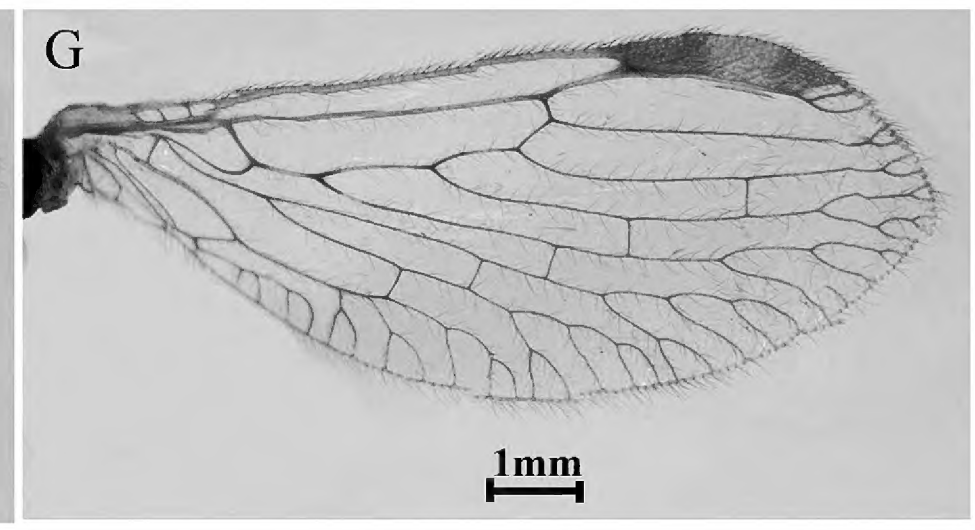


Figure 4. *Trichoscelia varia* (Walker, 1853). **A.** Head, anterior view. **B.** Mesonotum, lateral view. **C.** Head and thorax, dorsal view **D.** Foreleg, external view. **E.** Foreleg, interior view. **F.** Forewing. **G.** Hind wing.

***Entanoneura batesella* (Westwood, 1867)**
Figure 5A–G

Diagnosis. This species has the body yellow with brown marks, pronotum longer than broad with setae present only on the anterior and posterior ends, wings with elongated pterostigma and with a large amber mark, foreleg with 2 pretarsal claws and foreleg midtarsomere equal or longer than the other tarsomeres combined.

Examined material. Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 13–18.v.2016, Krolow, T.K. & Equipe leg. (3♂ 1♀ CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 7–10.iii.2016, Krolow, T.K. & Equipe leg. (1♂ CEUFT).

Distribution. Mexico, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guiana, French Guiana, and Brazil: Amazonas, Pará, Goiás, Distrito Federal, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, and Santa Catarina (Machado and Martins 2018).

New records. Tocantins: Pium municipality.

Comments. Of all species collected here, *E. batesella* was the largest and more robust one. It is possibly mimetic to wasps based on their general body color pattern.

***Haematomantispa* sp.**
Figure 6A–E

Diagnosis. This specimen has the body predominantly dark-red, pronotum longer than broad, with setae covering its entire length, wings hyaline and foreleg with 2 pretarsal claws.

Examined material. Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 9–10.xi.2012, Krolow, T.K. & Lima, H.I.L. leg. (1♀ CEUFT).

Distribution. The genus occurs from Costa Rica to Brazil: Amazonas and Rondônia (Machado and Martins 2018).

New records. Tocantins: Palmas municipality.

Comments. Until now the only species of *Haematomantispa* known from Brazil is *H. amazonica* Machado & Rafael, 2010. The unique specimen studied here is a female and probably is a new species, as it does not present the main morphological characters of *H. amazonica*. We opted not to formally describe this new species because our specimen is a female; the male genitalia provide the most important characters to distinguish species of *Haematomantispa*. We made many attempts to collected more specimens but all were unsuccessful.

***Leptomantispa axillaris* (Navás, 1908)**

Examined material. None.

Distribution. Colombia and Brazil: Amazonas, Para, Rondônia, Tocantins, Maranhão, Rio grande do Norte, Pernambuco, Espírito Santo, São Paulo, and Paraná (Machado and Martins 2018, Ardila-Camacho et al. 2018).

Comments. Specimens were not collected during this study. Similar to *D. gracilis*, the only record of *L. axillaris* from Tocantins is from the region of Parque Estadual do Jalapão, specifically at the Mateiros municipality, which we did not sample.

***Leptomantispa chaos* Hoffman, 2002**
Figure 7A–H

Diagnosis. This species has the body predominantly yellow with light-brown marks, pronotum longer than broad with setae present throughout its entire length, wings with pterostigma dark-brown and space between subcostal and radial veins light-brown, foreleg with 2 pretarsal claws and with ventral dark-brown mark on the femur.

Examined material. Brazil, Tocantins, Porto Nacional, Fazenda São Judas Tadeo, 10°48′21.5″ S, 048°26′13.6″ W, 05.viii.2011, Krolow, T.K. & Equipe leg. (1♂ CEUFT); Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′ 02.6″ S, 048°07′23.1″ W, 9–10.xi.2012, Krolow, T.K. & Lima, H.I.L. leg. (1♀ CEUFT); Brazil, Tocantins, Palmas, Roncadeira, 10°18.226′ S, 048°08.338′ W, 20–22. ii.2015, Krolow, T.K. (2♀ CEUFT); Brazil, Tocantins, Porto Nacional, Fazenda São Judas Tadeo, 10°48′21.5″ S, 048°26′13.6″ W, 27–29.iii.2015, Krolow, T.K. & Equipe leg. (2♀ CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 1–02. xi.2016, Krolow, T.K. & Equipe leg. (2♀ CEUFT); Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 28.viii.2017, Krolow, T.K. & Equipe leg. (6♂, 7♀ CEUFT); Brazil, Tocantins, Palmas, Vale do vai quem quer, 10°23′40.1″S, 048°07′55.8″ W, 13–14. xi.2017, Krolow, T. K. & Equipe leg. (1♀ CEUFT).

Distribution. Guatemala, Panama, Venezuela, French Guiana, and Brazil: Amazonas and Pará (Machado and Martins 2018).

New records. Tocantins: Palmas, Porto Nacional, and Pium municipalities.

Comments. Some of the specimens collected here were paler than described in the literature (Machado and Rafael 2010). Our specimens had light-brown marks while previously reported specimens had dark-brown marks, which suggests a possibility of regional variation, as the male genitalia are consistent with the original description (Hoffman 2002) and the later redescription (Machado and Rafael 2010).

***Zeugomantispa compellens* (Walker, 1860)**

Diagnosis. This species has the body predominantly green with red marks on the pronotum, pronotum longer than broad with setae present throughout its entire length and arising from distinctive bumps, wings hyaline with pterostigma light-red and foreleg with 2 pretarsal claws.

Examined material. Brazil, Tocantins, Palmas, Fazenda Encantada, 10°15′02.6″ S, 048°07′23.1″ W, 28.viii.2017, Krolow, T.K. & Equipe leg. (6♂, 8♀ CEUFT); Brazil, Tocantins, Palmas, Vale do vai quem quer, 10°23′40.1″ S, 048°07′55.8″ W, 13–14.xi.2017, Krolow, T.K. & Equipe leg. (2♂, 2♀ CEUFT).

Distribution. USA, Mexico, Belize, Guatemala, Honduras, El Savador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, Surinam, French Guiana, and Brazil: Roraima, Amazonas, Pará, Rondônia, Pernambuco, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, and Paraná (Machado and Martins 2018).

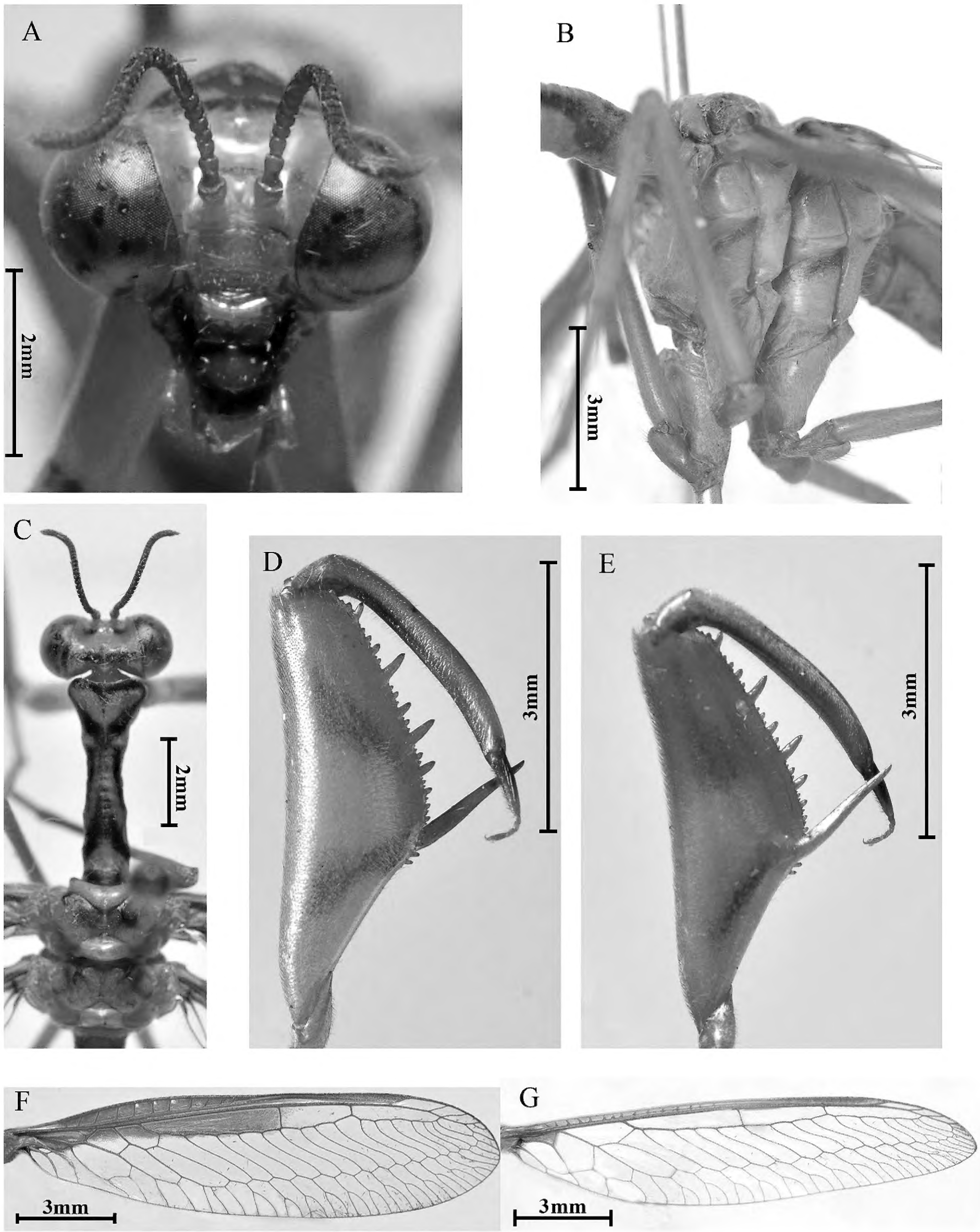


Figure 5. *Entanoneura batesella* (Westwood, 1867). **A.** Head, anterior view. **B.** Mesonotum, lateral view. **C.** Head and thorax, dorsal view. **D.** Foreleg, exterior view. **E.** Foreleg, internal view. **F.** Forewing. **G.** Hind wing.

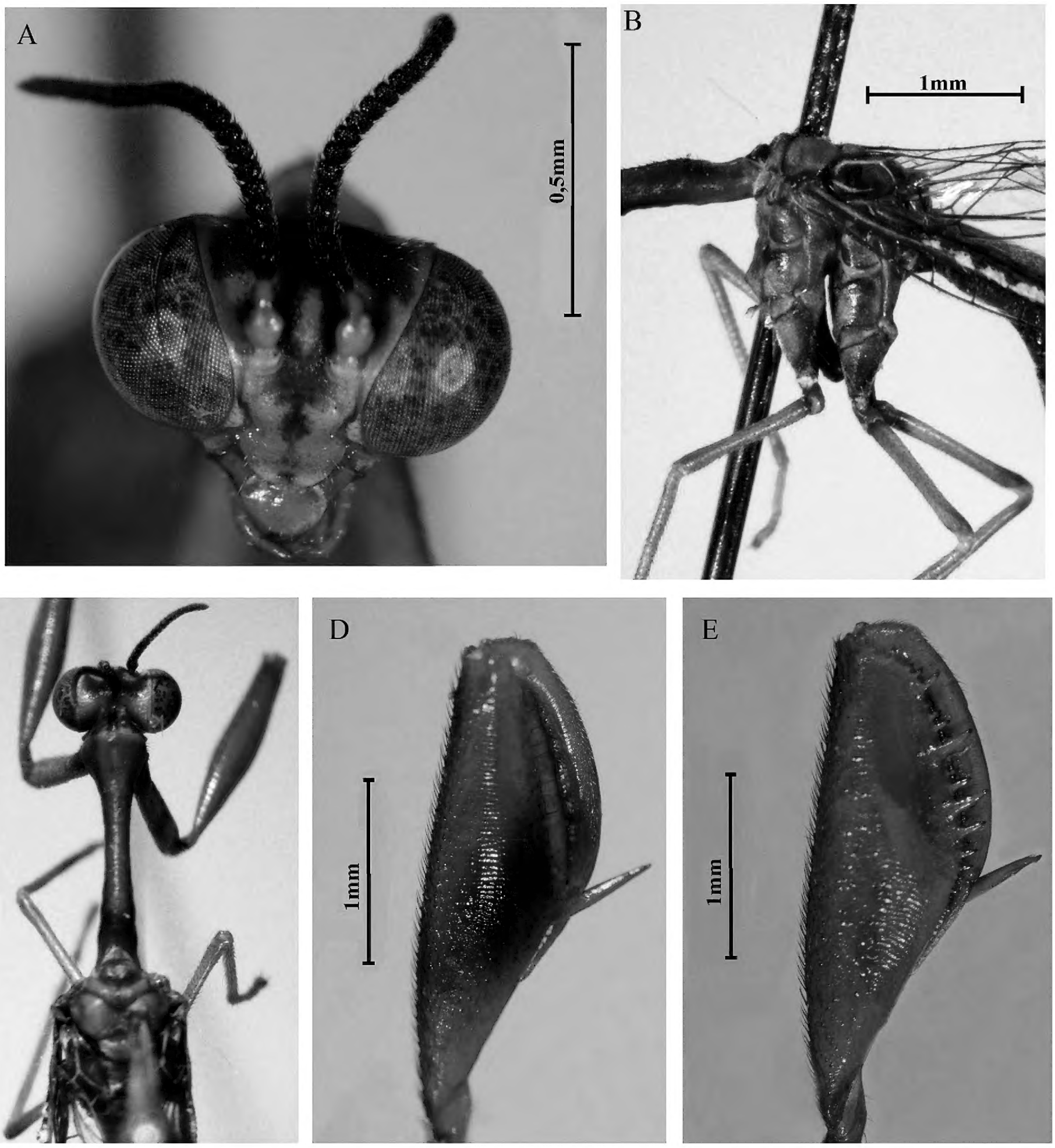


Figure 6. *Haematomantispa* sp. **A.** Head, anterior view. **B.** Mesonotum, lateral view. **C.** Head and thorax, dorsal view. **D.** Foreleg, exterior view. **E.** Foreleg, internal view.

New records. Tocantins: Palmas municipality.

Comments. Specimens preserved in ethanol and pinned tend to lose the overall greenish body color, becoming light-yellow or even whitish. This made dissection of the genitalia almost obligatory for identifying these specimens.

Zeugomantispa virescens (Rambur, 1842)

Diagnosis. This species has the body predominantly green, pronotum longer than broad with setae present throughout its entire length and arising from distinctive bumps, wings hyaline with pterostigma green and foreleg with 2 pretarsal claws.

Examined material. Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 13–18.v.2016, Krolow, T.K. & Equipe leg. (3♂ 1♀ CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 7–10.iii.2016, Krolow, T.K. & Equipe leg. (1♂ CEUFT); Brazil, Tocantins, Pium, Centro de Pesquisa Canguçu, 09°58′44.4″ S, 050°02′13.1″ W, 30.iii.2017, Alvim, B.C.G. leg. (1♀ CEUFT).

Distribution. USA, Mexico, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guiana, French Guyana, Argentina, Ecuador, Peru, Surinam, Trinidad and Tobago, Uruguay and Brazil: Amazonas, Pará, Goiás, Distrito Federal, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, and Santa Catarina (Machado and Martins 2018, Ardila-Camacho et al. 2018).

New records. Tocantins: Pium municipality.

Comments. As in *Z. compellens,* preserved specimens of *Z. virescens* tend to become light-yellow or whitish with time, and the use of male genitalia for identification purposes are usually needed.

Discussion

Our results represent a large addition in the knowledge of the family Mantispidae in the state of Tocantins, Brazil. The first record of the subfamily Symphrasinae was presented, as well 6 newly recorded species of the subfamily Mantispinae, including a possible new species of *Haematomantispa*.

The records of *A. fumosella* presented here are the northernmost occurrences of the species, which was previously known north to only Bahia state, Brazil. The records of *D. moulti* and *E. batesella* are the northernmost in the Cerrado biome of these species, increasing its distributions by almost 1,700 km and 1,200 km of their nearest recorded occurrences for D. moulti and E. batesella respectively. The southernmost record of *L. chaos* and the easternmost record of the genus *Haematomantispa* are presented here, which are the first records for these respective taxa from the Cerrado biome and Tocantins.

The remaining 4 species are also recorded for the first time from Tocantins: *P. hagenella*, *T. varia*, *Z. compellens*, *Z. virescens*. These records were expected, mostly because they all have large distributions including most of the neighbor states within the country.

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Authors' Contributions

BGCA and TKK collected and photographed the specimens. BGCA and RJPM identified the species. BGCA made the distribution map. BGCA, RJPM and TKK wrote the text.

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